

RESPIRATORY PROTECTION

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INTRODUCTION

REGULATORY AUTHORITY FOR IMPLEMENTATION OF

RESPIRATORY PROTECTION

The Occupational Safety and Health Act under 29 CFR 1910.134 and 29 CFR 1926.103 establishes requirements relating to respiratory protection. In response to the regulatory mandate, Steingass Mechanical Contracting, Inc. has developed and will maintain the Respiratory Protection Program to provide proper and safe procedures for all applicable employees.

RESPIRATORY PROTECTION

PURPOSE

This document was designed with the intent of outlining methods, practices and procedures under which respirator protection is to be effectively utilized.

RESPONSIBILITY

(Management Commitment)

Steingass Mechanical Contracting, Inc. shall instruct all appropriate employees in the safety significance of this Respiratory Program. In addition, Steingass Mechanical Contracting, Inc. considers these requirements to be of critical importance in helping to ensure that the applicable provisions of the Respirator Program are known, understood, and strictly adhere to by all employees. Strict enforcement of this Program is required to be in compliance with OSHA regulations. Any variance from this set procedure shall be considered a work rule violation and, because of the serious nature of this Program, disciplinary action will be taken in accordance with the disciplinary guidelines described in **Steingass Mechanical Contracting, Inc. Rules and Regulations**.

Steingass Mechanical Contracting, Inc.'s Safety Coordinator has been properly trained and is knowledgeable of the complexity of the Program and shall be responsible for the administration and conducting the evaluation of Steingass Mechanical Contracting, Inc.'s Respiratory Program. All respirators, training, and medical evaluations shall be provided to employees at no cost.

PERMISSIBLE PRACTICE

In the control of occupational diseases caused by breathing air contaminated with harmful dusts, fogs, fumes, mists, gases, smokes, sprays, or vapors, the primary objective is to prevent atmospheric contamination. This shall be accomplished as far as feasible by accepted engineering and/or administrative controls. (Example: general and local ventilation, enclosure or isolation and substitution of less hazardous processes or materials.) When effective engineering and/or administrative controls are not feasible, or while they are being instituted or during emergency situations with high exposure, respirators shall be provided which are applicable and suitable for purpose intended.

Steingass Mechanical Contracting, Inc. shall provide respirators and training when such equipment is necessary to protect the health of the employee. Steingass Mechanical Contracting, Inc. will provide the respirators, which are applicable and suitable for the purpose intended. Steingass Mechanical Contracting, Inc. shall be responsible for the establishment and maintenance of a respiratory protection program, which shall include the requirements outlined.

Steingass Mechanical Contracting, Inc. shall ensure that appropriate surveillance measures are in place and the employees leave the "Respirator Used Area" to wash, change cartridges, and detect break-through or resistance or for any reason the need to remove the respirator protection.

RESPIRATORY COMMUNICATION

Glossary of Terms

- Air-line Respirator:** See Respirator
- Air-purifying Respirator:** See Respirator
- Air-regulating Valve :** An adjustable valve used to regulate, but which cannot completely shut off, the airflow to the face piece, hood, or suit of an airline respirator.
- Air-supply Device:** A hand or motor-operated blower for the hose mask, or a compressor or other source of respirable air for the airline respirator.
- Approved:** Tested and listed as satisfactory by the Bureau of Mines (BM) of the U. S. Department of Labor, or jointly by the Mining Enforcement and Safety Administration (MESA) of The U. S. Department of Interior and the National Institute for Occupational Safety and Health (NIOSH) of the U. S. Department of Health, Education, and Welfare, or jointly by the Mine Safety and Health Administration (MSHA) of the U. S. Department of Labor and the National Institute for Occupational Safety and Health (NIOSH) of the U. S. Department of Health, Education and Welfare.
- Bioassay:** A determination of the concentration of a substance in a human body by an analysis of urine, feces, blood, bone, or tissue.
- Breathing Tube:** A tube through which air or oxygen flows to the face piece, mouthpiece, helmet, hood, or suit.
- Canister:** A container with a filter, sorbent, or catalyst, or any (air-purifying) combination thereof, which removes specific contaminants from the air drawn through it.

<u>Canister:</u>	A container filled with a chemical, which generates (oxygen-generation) oxygen by chemical reaction.
<u>Cartridge:</u>	A small canister. (Air- purifying)
<u>Catalyst:</u>	In respirator use, a substance which converts a toxic gas (or vapor) into a less-toxic gas or vapor.
<u>Ceiling Concentration:</u>	The concentration of an airborne substance that shall not be exceeded.
<u>Contaminant:</u>	A harmful, irritating, or nuisance material that is foreign to the normal atmosphere.
<u>Detachable Coupling:</u>	A device, which permits the respirator wearer, without using hand tools, to detach the air supply, line from that part of the respirator worn on the person.
<u>Exhalation Valve:</u>	A device that allows exhaled air to leave a respirator and prevents outside air from entering through the valve.
<u>Eyepiece:</u>	A gas-tight, transparent window in a full-face piece, helmet, hood, or suit, through which the wearer may see.
<u>Face piece:</u>	That portion of a respirator that covers the wearer's nose and mouth in a quarter-mask (above the chin) or half-mask (under the chin) face piece or that covers the nose, mouth, and eyes in a full face piece. It is designed to make a gas-tight or particle-tight fit with the face and includes the headbands, exhalation valves(s), and connections for an air-purifying device or respirable gas source, or both.
<u>Face Shield:</u>	A device worn in front of the eyes and in front of, or all, of the face, whose predominant function is protection of the eyes and the face.

Filter: A media component used in respirators to remove solid or liquid particles from the inspired air.

Gas: An air form fluid, which is in the gaseous state at ordinary temperature and pressure.

Hazardous Atmosphere: Any atmosphere, either immediately or not immediately dangerous to life or health, which is oxygen deficient or which contains a toxic or disease-producing contaminant exceeding the legally established permissible exposure limit (PEL) or where applicable, the Threshold Limit Value (TLV) established by the American Conference of Governmental Industrial Hygienists (ACGIH).

Head Harness: That part of a face piece assembly, which secures the face piece to the wearer.

Helmet: That portion of a respirator which shields the eyes, face, neck, and other parts of the head.

Inhalation Valve: A device that allows respirable air to enter a respirator and prevents exhaled air from leaving the respirator through the valve.

Inhalation Valve: A device that allows respirable air to enter a respirator and prevents exhaled air from leaving the respirator through the valve.

Irrespirable: Unfit for breathing

Maximum Use Limit of Filter, Cartridge, or Canister: The maximum concentration of a contaminant for which an air purifying filter, cartridge, or canister is approved for use.

MPCa: Maximum permissible airborne concentration. The National Committee on Radiation Protection sets these concentrations. They are recommended maximum average concentrations of radionuclides to which a worker may be exposed, assuming that he works 8 hours a day, 5 days a week, and 50 weeks a year.

Negative Pressure Respirator: A respirator in which the air pressure inside the respiratory-inlet covering is positive during exhalation in relation to the air pressure of the outside atmosphere and negative during inhalation in relation to the air pressure of the outside atmosphere.

Nonroutine Respirator Use: Wearing a respirator when carrying out a special task that occurs infrequently.

Oxygen Deficiency - immediately dangerous to life or health: An atmosphere having an oxygen concentration below the minimum legal requirement but above that which is immediately dangerous to life or health.

Oxygen Deficiency - not immediately dangerous to life or health: An atmosphere which causes an oxygen partial pressure of 100 millimeters of mercury column or less in the freshly inspired air in the upper portion of the lungs which is saturated in water vapor.

Particulate Matter: A suspension of fine solid or liquid particles in the air, such as dust, fog, fume, mist, smoke, or spray. Particulate matter suspended in air is commonly known as an aerosol.

Permissible Exposure Limit (PEL): The legally established time-weighted average (TWA) concentration or ceiling concentration of a contaminant that shall not be exceeded.

Positive-Pressure Respirator: A respirator in which the air pressure inside the respiratory-inlet covering is positive in relation to the air pressure of the outside atmosphere during exhalation and inhalation.

Respirator: A device designed to protect the wearer from the inhalation of harmful atmospheres.

Respiratory-inlet Covering: That portion of a respirator which connects the wearer's respiratory tract to an air-purify device or respirable gas source, or both. It may be a face piece, helmet, hood, suit or mouthpiece/nose clamp.

Routine Respirator Use:

Wearing a respirator as a normal procedure when carrying out a regular and frequently repeated task.

Sanitization:

The removal of dirt and the inhibiting of the action of agents that cause infection and disease.

Time-weighted Average (TWA):

The average concentration of a contaminant in air during a specific time period.

Valve:

A device which controls the pressure, (air or oxygen) direction, or rate of flow of air or oxygen.

Vapor:

The gaseous state of a substance that is solid or liquid at ordinary temperature or pressure.

Window Indicator:

A device on a cartridge or canister that visually denotes the service life of the cartridge or canister.

GENERAL REQUIREMENTS

Steingass Mechanical Contracting, Inc. shall select the proper type of respirator based upon the hazard that the worker is exposed to type of the hazardous operation or process, the type of respiratory hazard (including physical properties, physiological effects on the body, concentration of toxic material, established permissible time-weighted average concentration for the toxic material, and established immediately dangerous to life or health (IDLH) concentration for toxic material), the location of the hazardous area in relation to the nearest area having respirable air, the period of time for which respiratory protection is required to be worn in the hazardous area, the physical characteristics and functional capabilities and limitations of the various types of respirators, and respirator protection factors. If this cannot be done than exposures will be addressed as (IDLH).

Steingass Mechanical Contracting, Inc. shall select from a sufficient number of respirator models and sizes so that the respirator is acceptable to, and currently fits the user. Only NIOSH-certified respirators shall be used. Respirators shall be proved at no cost.

RESPIRATORS FOR IDLH ATMOSPHERES

1. The following respirators will be provided for employee use in IDLH atmospheres:
 - a. A full face piece pressure demand SCBA certified by NIOSH with a minimum service life of thirty minutes, or
 - b. A combination full-face piece pressure demand supplied-air respirator (SAR) with auxiliary self-contained air supply.
2. Respirators provided only for escape from IDLH atmospheres will be NIOSH-certified for escape from the atmosphere in which they will be used.
3. All oxygen-deficient atmospheres will be considered IDLH, and the respirator(s) used must be those discussed. **EXCEPTION:**
If Steingass Mechanical Contracting, Inc. demonstrates that, under all foreseeable conditions, the oxygen concentration can be maintained within the ranges, and then any atmosphere-supplying respirator may be used.

RESPIRATOR FOR ATMOSPHERES THAT ARE NOT IDLH

1. The respirator selected will:
 - a. Adequately protect the health of the employee and ensure compliance with all other OSHA statutory and regulatory requirements, under routine and reasonable foreseeable emergency situations,
 - b. Be appropriate for the chemical state and physical form of the contaminant,
 - c. Protect against gases and vapors, Steingass Mechanical Contracting, Inc. will provide an atmosphere-supplying respirator, or an air-purifying respirator that is equipped with an end-of-service-life indicator (ESLI) certified by NIOSH, or
 - d. If there is no ESLI appropriate for conditions in Steingass Mechanical Contracting, Inc.'s workplace, Steingass Mechanical Contracting, Inc. will implement a change schedule for canisters and cartridges that is based on objective information or data that will ensure that canisters and cartridges are changed before the end of their service life. Steingass Mechanical Contracting, Inc. will describe in the respirator program the information and data relied upon and the basis for reliability of the data.
2. For protection against particulates, Steingass Mechanical Contracting, Inc. will provide:
 - a. An atmosphere-supplying respirator; or
 - b. An air-purifying respirator equipped with a filter certified by NIOSH under 30 CFR part 11 as a high efficiency particulate air (HEPA) filter, or an air-purifying respirator equipped with a filter certified for particulates by NIOSH under 42 CFR part 84; or

- c. For contaminants consisting primarily of particles with mass median aerodynamic diameters (MMAD) of at least 2 micrometers, an air-purifying respirator equipped with any filter certified for particulates by NIOSH.

MEDICAL EVALUATION

Using a respirator may place a physiological burden on employees that varies with the type of respirator worn, the job and workplace conditions in which the respirator is used, and the medical status of the employee. Employees will be given a chance to discuss any results that are done at a convenient time during working hours.

The minimum requirements for medical evaluation that employers must implement to determine the employee's ability to use a respirator are:

1. A medical evaluation to determine the employee's ability to use a respirator, before the employee is fit tested or required to use the respirator in the workplace.
2. Steingass Mechanical Contracting, Inc. will select a physician or other licensed health care professional (PLHCP) to perform medical evaluations using a medical evaluation questionnaire or an initial medical examination that obtains the same information as the medical questionnaire.
3. The medical evaluation shall obtain the information requested by the questionnaire. **(SEE ATTACHED)**
4. Provide a follow-up medical examination for an employee who gives a positive response to any question among questions 1 through 8 in Section 2, Part A of Appendix C or whose medical examination demonstrates the need for a follow-up medical examination.

5. The follow-up medical examination shall include any medical tests, consultations, or diagnostic procedures that the PLHCP deems necessary to make a final determination.
6. The medical questionnaire and examinations shall be confidentially administered during the employee's normal working hours or at a time and place convenient to the employee. The medical questionnaire shall be administered in a manner that ensures that the employee understands its content.
7. Every employee shall have an opportunity to discuss the questionnaire and examination results with the PLCHP.
8. The following supplemental information must be provided to the PLHCP before the PLHCP makes a recommendation concerning an employee's ability to use a respirator:
 - a. The type and weight of the respirator to be used by the employee,
 - b. The duration and frequency of respirator use (including use for rescue and escape),
 - c. The expected physical work effort,
 - d. Additional protective clothing and equipment to be worn, and
 - e. Temperature and humidity extremes that may be encountered.
9. Any supplemental information provided previously to the PLHCP regarding an employee need not be provided for a subsequent medical evaluation if the information and the PLHCP remain the same.
10. The PLHCP must be provided with a copy of the written respiratory protection program.
11. When Steingass Mechanical Contracting, Inc. replaces a PLHCP, Steingass Mechanical Contracting, Inc. must ensure that the new PLHCP obtains this information.

12. Written recommendation shall be obtained from the PLHCP in determining the employee's ability to use a respirator. The recommendation shall provide only the following information:
 - a. Any limitations on respirator use related to the medical condition of the employee, or related to the workplace conditions in which the respirator will be used, including whether or not the employee is medically able to use the respirator,
 - b. The need, if any, for follow-up medical evaluations, and
 - c. A statement that the PLHCP has provided the employee with a copy of the PLHCP's written recommendation.

13. If the respirator is a negative pressure respirator and the PLHCP finds a medical condition that may place the employee's health at increased risk if the respirator is used, Steingass Mechanical Contracting, Inc. shall provide a PAPR if the PLHCP's medical evaluation finds that the employee can use such a respirator. If a subsequent medical evaluation finds that the employee is medically able to use a negative pressure respirator, then Steingass Mechanical Contracting, Inc. is no longer required to provide a PAPR.

14. Additional medical evaluations that comply with the requirements of this section shall be provided if:
 - a. An employee reports medical signs or symptoms that are related to ability to use a respirator.
 - b. A PLHCP, supervisor, or the respirator program administrator informs the employer that an employee needs to be reevaluated,
 - c. Information from the respiratory protection program, including observations made during fit testing and program evaluation, indicates a need for employee reevaluation, or

- d. A change occurs in workplace conditions (e.g., physical work effort, protective clothing, temperature) that may result in a substantial increase in the physiological burden placed on an employee.

FIT TESTING

Before an employee may be required to use an respirator with a negative or positive pressure tight-fitting face piece, the employee will be fit tested with the same make, model, style, and size of respirator that will be used.

1. All employees using a tight-fitting face piece respirator are required to pass an appropriate qualitative fit test (QLFT) or quantitative fit test (QNFT.)
2. All employees using a tight-fitting face piece respirator must be fit tested prior to initial use of the respirator, whenever a different respirator face piece (size, style, model, or make) is used, and at least annually thereafter.
3. An additional fit test shall be conducted whenever the employee reports, or Steingass Mechanical Contracting, Inc., PLHCP, supervisor, or program administrator makes visual observations of, changes in the employee's physical condition that could affect respirator fit. Such conditions include, but are not limited to, facial scarring, dental changes, cosmetic surgery, or an obvious change in body weight.
4. If, after passing a QLFT or QNFT, the employee subsequently notifies Steingass Mechanical Contracting, Inc., program administrator, supervisor, or PLHCP that the fit of the respirator is unacceptable, the employee shall be given a reasonable opportunity to select a different respirator face piece and be retested.

5. The fit test shall be administered using an OSHA-accepted QLFT or QNFT protocol.
6. A QLFT may only be used to fit test negative pressure air-purifying respirators that must achieve a fit factor of 100 or less.
7. If the fit factor, as determined through an OSHA-accepted QNFT protocol, is equal to or greater than 100 for tight-fitting half face pieces, or equal to or greater than 500 for tight fitting full face pieces, the QNFT has been passed with that respirator.
8. Fit testing of tight-fitting atmosphere-supplying respirators and tight-fitting powered air-purifying respirators shall be accomplished by performing quantitative or qualitative fit testing in the negative pressure mode, regardless of the mode of operation (negative or positive pressure) that is used for respiratory protection.
 - a. Qualitative fit testing of these respirators shall be accomplished by temporarily converting the respirator user's actual face piece into a negative pressure respirator with appropriate filters, or by using an identical negative pressure air-purifying respirator face-piece with the same sealing surfaces as a surrogate for the atmosphere-supplying or powered air-purifying respirator or face piece.
 - b. Quantitative fit testing of these respirators shall be accomplished by modifying the face piece to allow sampling inside the face piece in the breathing zone of the user, midway between the nose and mouth. This requirement shall be accomplished by installing a permanent sampling probe onto a surrogate face piece, or by using a sampling adapter designed to temporarily provide a means of sampling air from inside the face piece.

- c. Any modifications to the respirator face piece for fit testing shall be completely removed, and the face piece restored to NIOSH-approved configuration, before that face piece can be used in the workplace.

USE OF RESPIRATORS

FACEPIECE SEAL PROTECTION

1. Use of respirators will not be permitted, if the following conditions exists:
 - a. Facial hair that comes between the sealing surface of the face piece and the face or that interferes with valve function, or
 - b. Any condition that interferes with the face-to-face piece weal or valve function.
2. If an employee wears corrective glasses or goggles or other personal protective equipment, Steingass Mechanical Contracting, Inc. will ensure that such equipment is worn in a manner that does not interfere with the seal of the face piece to the face of the user.
3. For all tight-fitting respirators, Steingass Mechanical Contracting, Inc. will ensure that employees perform a user seal check each time they put on the respirator using the procedures.

CONTINUING RESPIRATOR EFFECTIVENESS

1. Appropriate surveillance shall be maintained of work area conditions and degree of employee exposure or stress. When there is a change in work conditions or degree of employee exposure or stress that may affect respirator effectiveness, Steingass Mechanical Contracting, Inc. will reevaluate the continued effectiveness of the respirator.
2. Visual, voice, or signal line communication shall be maintained between the employee(s) in the IDLH atmosphere and the employee(s) located outside the IDLH atmosphere.

3. Employee(s) located outside the IDLH atmosphere shall be trained and equipped to provide effective emergency rescue.
4. Steingass Mechanical Contracting, Inc. or their designee is notified before the employee(s) located outside the IDLH atmosphere attempt to provide emergency rescue;
5. Steingass Mechanical Contracting, Inc. or their designee authorized to do so by Steingass Mechanical Contracting, Inc., once notified, provides necessary assistance appropriate to the situation.
6. Employee(s) located outside the IDLH atmospheres are equipped with:
 - a. Pressure demand or other positive pressure SCBAs, or a pressure demand or other positive pressure supplied-air respirator with auxiliary SCBA; and either
 - b. Appropriate retrieval equipment for removing the employee(s) who enter(s) these hazardous atmospheres where retrieval equipment would not increase the overall risk resulting from entry; or
 - c. Equivalent means for rescue where retrieval equipment is not required.

PROCEDURES FOR INTERIOR STRUCTURAL FIREFIGHTING FOR IDLH ATMOSPHERES

1. At least two (2) employees enter the IDLH atmosphere and remain in visual or voice contact with one another at all times.
2. At least two (2) employees are located outside the IDLH atmosphere; and
3. All employees engaged in interior structural firefighting use SCBAs.

MAINTENANCE AND CARE OF RESPIRATORS CLEANING AND DISINFECTING RESPIRATORS

1. Each employee that uses a respirator will be supplied with a clean, sanitary, and in good working order. Steingass Mechanical Contracting, Inc. will ensure that respirators are cleaned and disinfected using the procedures in Appendix B-2 of this section, or procedures recommended by the respirator manufacturer, provided that such procedures are of equivalent effectiveness. Steingass Mechanical Contracting, Inc. Safety Coordinator will ensure that respirators are cleaned and disinfected at the following intervals:
 - a. Respirators issued for the exclusive use of an employee shall be cleaned and disinfected as often as necessary to be maintained in a sanitary condition;
 - b. Respirators issued to more than one employee shall be cleaned and disinfected before being worn by different individuals.

It shall be Steingass Mechanical Contracting, Inc. policy to clean and sanitize respirators in accordance with the manufacturer's guidelines.

HALF-MASKS

Half-masks are to be washed with detergent in warm water using a brush, thoroughly rinsed in clean water (add two tablespoons of chlorine bleach per gallon) and then air dried in a clean place. Masks will be inspected regularly for cracks and dents, placed in a resealable plastic bag, returned to their box and stored in a clean, cool, dry place.

Employee lockers are suitable as long as the respirator is in a carton.

Half-masks that are used on a daily basis will be washed daily.

Since cartridges become less effective with use, they shall be replaced when the employee begins to smell fumes and vapors or experiences dizziness or headaches or feels the cartridges are restricting his ability to breath appropriately. Employees shall immediately leave the respirator used area to wash, change cartridges oo if they detect break through or resistance.

Temperature of cleaning and sanitizing at the recommended **120 degrees F** will avoid possible overheating and distortion of parts of the respirator assembly, which would necessitate replacement.

STORAGE

1. All respirators shall be stored to protect them from damage, contamination, dust, sunlight, extreme temperatures, excessive moisture, and damaging chemicals, and they will be packed or stored to prevent deformation of the face piece and the exhalation valve.

2. Emergency respirators shall be:
 - a. Kept accessible to the work area.
 - b. Stored in compartments or in covers that are clearly marked as containing emergency respirators.
 - c. Stored in accordance with any applicable manufacturer instruction.

RESPIRATOR INSPECTION

1. All respirators used in routine situations will be inspected before each use and during cleaning by each employee that uses them.
2. All respirators maintained for use in emergency situations will be inspected at least monthly and in accordance with the manufacturer's recommendations, and will be checked for proper function before and after each use.
3. Emergency escape-only respirators will be inspected before being carried into the workplace for use.
4. Respirator inspections include the following:
 - a. A check for respirator function, tightness of connections, and the condition of the various parts including, but not limited to, the face piece, head straps, valves, connecting tube, and cartridges, canisters or filters.
 - b. A check of electrometric parts for pliability and signs of deterioration.
 - c. Self-contained breathing apparatus will be inspected monthly. Air and oxygen cylinders shall be maintained in a fully charged state and will be recharged when the pressure falls to 90% of the manufacturer's recommended pressure level. Steingass Mechanical Contracting, Inc. shall determine that the regulator and warning devices function properly.
5. For respirators maintained for emergency use:
 - a. Certify the respirator by documenting the date the inspection was performed, the name (of signature) of the person who made the inspection, the findings, required remedial action, and a serial number or other means of identifying the inspected respirator.

- b. Provide this information on a tag or label that is attached to the storage compartment for the respirator is kept with the respirator, or is included in inspection reports stored as paper or electronic files. This information will be maintained until replaced following a subsequent certification.

RESPIRATOR REPAIRS

1. Respirators that fail an inspection or are otherwise found to be defective are removed from service, and are discarded or repaired are adjusted in accordance with the following procedures:
 - a. Repairs or adjustments to the respirators are to be made only by persons appropriately trained to perform such operations and will use only the respirator manufacturer's NIOSH-approved parts designed for that respirator.
 - b. Repairs will be made according to the manufacturer's recommendations and specifications for the type and extent of repairs to be performed, and
 - c. Reducing the admission valves, regulators and alarms shall be adjusted or repaired only by the manufacturer or a technician trained by the manufacture.

BREATHING AIR QUALITY AND USE

1. The following specifications for compressed air, compressed oxygen, liquid air, and liquid oxygen are as follows:
 - a. Compressed and liquid oxygen shall meet the United States Pharmacopoeia requirements for medical or breathing oxygen, and
 - b. Compressed breathing air shall meet at least the requirements for Type 1-Grade D breathing air described in ANSI/Compressed Gas Association Commodity Specification for Air, G-7.1 – 1989, to include:
 - i. oxygen content (v/v) of 19.5 – 23.5%
 - ii. hydrocarbon (condensed) content of 5 milligrams per cubic meter of air or less,
 - iii. carbon monoxide (CO) content of 10ppm or less,
 - iv. carbon dioxide content of 1,000 ppm or less, and
 - v. lack of noticeable odor.
2. Compressed oxygen is not used in atmosphere-supplying respirators that have previously used compressed air.
3. Oxygen concentration greater than 23.5% are used only in equipment designed for oxygen service or distribution.
4. Cylinders used to supply breathing air to respirators will meet the following requirements:
 - a. Cylinders are tested and maintained as prescribed in the Shipping Container Specification Regulations of the Department of Transportation (49 CFR part 173 and part 178),

- b. Cylinders of purchased breathing air have a certificate of analysis from the supplier that the breathing air meets the requirements for Type 1 – Grade D breathing air, and
 - c. The moisture content in the cylinder does not exceed a dew point of -50°F (-45.6°C) at least 1 atmosphere pressure.
5. Compressors used to supply breathing air to respirators will be constructed and situated to:
- a. Prevent entry of contaminated air into the air-supply system,
 - b. Minimize moisture content so that the dew point at 1 atmosphere pressure is 10 degrees F (5.56°C) below the ambient temperature,
 - c. Have suitable in-line air-purifying sorbent beds and filters to further ensure breathing air quality. Sorbent beds and filters shall be maintained and replaced or refurbished periodically following the manufacturer's instructions.
 - d. Have a tag containing the most recent change date and the signature of the person authorized by the employer to perform the change. The tag shall be maintained at the compressor.
6. The carbon monoxide levels in the breathing air for compressors that are not oil lubricated, must not exceed 10ppm.
7. For oil lubricated compressors, a high-temperature or carbon monoxide alarm, or both, shall be used to monitor carbon monoxide levels. If only high-temperature alarms are used, the air supply shall be monitored at intervals sufficient to prevent carbon monoxide in the breathing air from exceeding 10ppm.

8. Breathing air couplings are incompatible with outlets for non-respirable work-site air or other gas systems. No asphyxiating substance shall be introduced into breathing airlines.
9. Breathing gas containers marked in accordance with NIOSH respirator certification standard, 42 CFR part 84.

IDENTIFICATION OF FILTERS, CARTRIDGES AND CANISTERS

1. All filters, cartridges, and canisters used by Steingass Mechanical Contracting, Inc. will be labeled and color-coded with the NIOSH approval label.
2. Labels are not to be removed and must remain legible.

TRAINING AND INFORMATION

The intention of this section is to address comprehensively the issue of informing and training all appropriate employees of Steingass Mechanical Contracting, Inc. in the safety significance of the safe use of the respirator. All appropriate employees will be instructed in the selection, use and maintenance of the respirator selected for use under the scope of this policy. In addition, the following sections shall serve as guidelines for employee training.

All supervisors as well as every employee who is required to wear a respirator shall be trained in the proper use of the assigned respiratory protection upon initial assignment and annually thereafter.

1. This training includes:
 - a. Description of the respirator,
 - b. Intended use and limitations of the respirator,
 - c. Proper wearing, adjustment and testing for fit,
 - d. The engineering and administrative controls being used and the need for respirators to provide protection,
 - e. The reason for selecting a particular type of respirator,
 - f. Cleaning and storage methods, and
 - g. Inspection and maintenance procedures.
 - h. Medical signs and symptoms.
 - i. The OSHA Standard
2. Retraining shall be administered annually, and when the following situations occur:

- a. Changes in the workplace or the type of respirator render previous training obsolete,
- b. Inadequacies in the employee's knowledge or use of the respirator indicate that the employee has not retained the necessary understanding or skill,
and
- c. Any other situation arises in which retraining appears necessary to ensure safe respirator use.

INSPECTION AND EVALUATION TO DETERMINE EFFECTIVENESS

1. The respiratory training program shall be evaluated annually by Steingass Mechanical Contracting, Inc. to determine its continued effectiveness.
2. Evaluations of the workplace will be conducted as necessary to ensure that the provisions of the current program are being effectively implemented and that it continues to be effective. Factors to be assessed include, but are not limited to:
 - a. Respirator fit (including the ability to use the respirator without interfering with effective workplace performance),
 - b. Appropriate respirator selection for the hazards to which the employee is exposed,
 - c. Proper respirator use under the workplace conditions the employees encounters, and
 - d. Proper respirator maintenance.

RECORDKEEPING

The following records shall be maintained in the main office:

1. Medical evaluation.
2. Fit testing.
 - a. A record of the qualitative and quantitative fit tests administered, including:
 - i. the name or identification of the employee tested,
 - ii. type of fit test performed,
 - iii. specific make, model, style, and size of respirator tested,
 - iv. date of test, and
 - v. the pass/fail results for QLFTs or the fit factor and strip chart recording or other recording of the test results for QNFTs.
3. Employees will be asked about fit selection, use, maintenance and any concerns.

**RESPIRATOR
MEDICAL
EVALUATION
QUESTIONNAIRE
AND
FORMS**

RESPIRATOR MEDICAL EVALUATION QUESTIONNAIRE

Answers to questions in Section 1, and to question 9 in Section 2 of Part A, **DO NOT** require a medical examination.

Can you read (circle one): Yes/No

PART A. SECTION 1 (Mandatory)

The following information must be provided by every employee who has been selected to use any type of respirator (please print).

1. Today's date: _____
2. Name: _____
3. Age (to the nearest year): _____
4. Sex (circle one): Male/Female
5. Height: _____ ft. _____ in.
6. Weight: _____ lbs.
7. Job Title: _____
8. A phone number where you can be reached by the health care professional who reviews the questionnaire (include the area code):
() _____
9. The best time to phone you at this number: _____
10. Has your employer informed you how to contact the health care professional who will review this questionnaire (circle one): Yes/No
11. Check the type of respirator you will use (you can check more than one category):
_____ N, R, or P disposable respirator (filter-mask, non-cartridge type only).
_____ Other type (for example, half- or full-face type, powered-air purifying, supplied-air, self-contained breathing apparatus).
12. Have you worn a respirator (circle one): Yes/No
If "yes" what
type(s): _____

PART A. SECTION 2 (Mandatory)

Question 1 through 9 below must be answered by every employee who has been selected to use any type of respirator (please circle "yes" or "no").

1. Do you ***currently*** smoke tobacco, or have you smoked tobacco in the last month: Yes/No

2. Have you ***ever had*** any of the following conditions?
 - a. seizures (fits): Yes/No
 - b. diabetes (sugar disease): Yes/No
 - c. allergic reaction that interferes with your breathing: Yes/No
 - d. claustrophobia (fear of closed-in places): Yes/No
 - e. trouble smelling odors: Yes/No

3. Have you ***ever had*** any of the following pulmonary or lung problems?
 - a. asbestosis: Yes/No
 - b. asthma: Yes/No
 - c. chronic bronchitis: Yes/No
 - d. emphysema: Yes/No
 - e. pneumonia: Yes/No
 - f. tuberculosis: Yes/No
 - g. silicosis: Yes/No
 - h. pneumothorax (collapsed lung): Yes/No
 - i. lung cancer: Yes/No
 - j. broken ribs: Yes/No
 - k. any chest injuries or surgeries: Yes/No
 - l. any other lung problems that you have been told about: Yes/No

4. Do you currently have any of the following symptoms of pulmonary or lung illness:
 - a. shortness of breath: Yes/No
 - b. shortness of breath when walking fast on level ground or walking up a slight hill or incline: Yes/No
 - c. shortness of breath when walking with other people at an ordinary pace on level ground: Yes/No
 - d. have to stop for breath when walking at your own pace on level ground: Yes/No
 - e. shortness of breath when washing or dressing yourself: Yes/No
 - f. shortness of breath that interferes with your job: Yes/No
 - g. coughing that produces phlegm(thick sputum): Yes/No
 - h. coughing that wakes you early in the morning: Yes/No
 - i. coughing that occurs mostly when your lying down: Yes/No
 - j. coughing up blood in the last month: Yes/No
 - k. wheezing: Yes/No
 - l. wheezing that interferes with your job: Yes/No
 - m. chest pain when you breathe deeply: Yes/No

- n. any other symptoms that you think may be related to lung problems: Yes/No
5. Have you *ever had* any of the following cardiovascular or heart problems?
- a. heart attack: Yes/No
 - b. stroke: Yes/No
 - c. angina: Yes/No
 - d. heart failure: Yes/No
 - e. swelling in your legs or feet (not caused by walking): Yes/No
 - f. heart arrhythmia (heart beating irregularly): Yes/No
 - g. high blood pressure: Yes/No
 - h. any other problems that you have been told about: Yes/No.
6. Have *you ever* had any of the following cardiovascular or heart symptoms?
- a. frequent pain or tightness in your chest: Yes/No
 - b. pain or tightness in your chest during physical activity: Yes/No
 - c. pain or tightness in your chest that interferes with your job: Yes/No
 - d. in the past two years, have you noticed your heart skipping or missing a beat: Yes/No
 - e. heartburn or indigestion that is not related to eating: Yes/No
 - f. any other symptoms that you think may be related to heart or circulation problems: Yes/No
7. Do you *currently* take medications for any of the following problems?
- a. breathing or lung problems: Yes/No
 - b. heart trouble: Yes/No
 - c. blood pressure: Yes/No
 - d. seizures: Yes/No
8. If you've used a respirator, have you *ever had* any of the following problems? *(If you've never used a respirator, check the following space _____ and go to question 9)*
- a. eye irritation: Yes/No
 - b. skin allergies or rashes: Yes/No
 - c. general weakness or fatigue: Yes/No
 - d. anxiety: Yes/No
 - e. any other problem that interferes your use of a respirator: Yes/No
9. Would you like to talk to the health care professional who will review this questionnaire about your answers to this questionnaire: Yes/No

Questions 10 –15 below ***must*** be answered by every employee who has been selected to use either a full-face piece respirator or a self-containing breathing apparatus (SCBA). For employees who have been selected to use other types of respirators, answering these questions is voluntary.

10. Have you ***ever lost*** vision in either eye: Yes/No
(temporarily or permanently)
11. Do you ***currently*** have any of the following vision problems?
a. wear contact lenses: Yes/No
b. wear glasses: Yes/No
c. color blind: Yes/No
d. any other eye or vision problems: Yes/No
12. Have you ***ever had*** any injury to your ears, including a broken ear drum? Yes/No
13. Do you ***currently*** have any of the following hearing problems?
a. difficulty hearing: Yes/No
b. wear a hearing aid: Yes/No
c. any other hearing or ear problem: Yes/No
14. Have you ***ever had*** a back injury: Yes/No
15. Do you ***currently*** have any of the following musculoskeletal problems?
a. weakness in any of your arms, hands, legs, or feet: Yes/No
b. back pain: Yes/No
c. difficulty fully moving your arms and legs: Yes/No
d. pain or stiffness when you lean forward or backward at the waist: Yes/No
e. difficulty fully moving your head side to side: Yes/No
f. difficulty fully moving your head up or down: Yes/No
g. difficulty bending at your knees: Yes/No
h. difficulty squatting to the ground: Yes/No
i. climbing a flight of stairs or a ladder carrying more than 25 pounds: Yes/No
j. any other muscle or skeletal problem that interferes with using a respirator: Yes/No

**Steingass Mechanical Contracting, Inc.
Employee Training Statement**

The purpose of this training is to gain understanding of established **Steingass Mechanical Contracting, Inc.'s Respirator Program/Procedures**. You are accountable for ensuring that you understand by asking questions and seeking clarification during training and day-to-day practical job applications.

This Program has been developed to be as workable as possible while accomplishing our safety goals and complying with current OSHA regulations. You are welcome to suggest changes to these procedures. All suggestions will be evaluated based on their workability, impact on safety, and compliance with current OSHA regulations.

As one of **Steingass Mechanical Contracting, Inc.'s Employees**, I have reviewed the latest copy of **Steingass Mechanical Contracting, Inc.'s Respirator Program**, and in addition, I have received the following training.

- A. Need for Respiratory Protection
- B. The Proper Use of Our Respirator and Its Limitations
- C. Respirator Maintenance
- D. Inspection of Respiratory Equipment

Employee Signature_____

Date_____

Time_____

Fit Test Documentation

Date _____

Employee Name _____

Employee Social Security Number _____

Job Function _____

Type of Test. Fit Test

Results of Test: Pass Fail

Date of Equipment Issuance _____

Signature of Test Operator

Signature of Employee

Test Operator (Please Print)

Program Administrator

Steingass Mechanical Contracting, Inc.
ANNUAL EVALUATION

Date of Periodic Inspection: _____

Evaluation Performed by: _____

Specific procedures reviewed:

Review of injuries and/or accidents reports list below any accidents or injuries including specific sequence, applicable equipment, process or machinery:

Modifications made based on this periodic inspection:

COMMENTS: _____

Signature/Title

Date

